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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,636	12/19/2003	Ray Hebert	NAK-130B/US	9907
30869	7590	09/11/2006	EXAMINER	
LUMEN INTELLECTUAL PROPERTY SERVICES, INC. 2345 YALE STREET, 2ND FLOOR PALO ALTO, CA 94306			AKANBI, ISIAKA O	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/750,636		HEBERT ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Isiaka O. Akanbi		2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Amendment***

The amendment file 15 June 2006 has been entered into this application.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26 are rejected under 35 U.S.C. 101 the claimed invention is directed to non-statutory subject matter.

Claim 26 recites the limitation "determining optical properties of said sample based on said measured intensity". Merely determining optical properties of said sample based on said measured intensity would not appear to be sufficient to constitute a tangible result, since the outcome of the determination step has not been used in a disclosed practical application nor made available in such a manner that's it's usefulness in a disclosed practical application can be realized. See OG Notices: 22 November 2005, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility".

### ***Response to Arguments***

Applicant's arguments/remarks, see pages 11-19, filed 15 June 2006, with respect to the rejection(s) of claim(s) 1-34 under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of claim amendment.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10, 13, 15-17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brierley (5,106,196).

Claims 1 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brierley. The reference of Brierley teaches of a method/apparatus for characterizing optical properties of sample of claims 1 and 26, comprising a) a light source beam (16), b) at least first set of components defining a first light path, said components including least a first component pair of a first planar mirror (21/23) and a first parabolic mirror (50) with a first focal length and a second component pair of a second planar mirror (36) and a second parabolic mirror (22) with a second focal length, wherein said first set of components is disposed between said source (16) and said sample (12) on said first light path (fig. 2) (col. 1, line 14-16) and c) an element (12) onto which said beam is illuminated, wherein said beam illuminates said element at angles substantially near normal to said element (figs. 1a-1c and 2-5). However the reference of Brierley is silent regarding a light source for generating a broadband beam. The use of a light source for generating a broadband beam is known in the art. It would have been obvious to one having ordinary skill in the art at the time of invention to use a light source that generate a broadband beam to illuminates said first planar mirror and said first parabolic mirror in said first component pair and said second planar mirror and said second parabolic mirror in said second component pair at angles substantially near normal to said first planar mirror and said first parabolic mirror said first component pair and said second planar mirror and said second parabolic mirror in said second component pair for the purpose of providing multiple measurement.

As to claim 2, according to claim 1, Brierley discloses wherein said first planar mirror (21) and said first parabolic mirror (50) in said first component pair are positioned such that said broadband beam exiting said first component pair is collimated (col. 3, line 25-31).

As to claim 3, Brierley discloses wherein said second planar mirror (36) and said second parabolic mirror (22) in said second component pair are positioned such that said broadband beam entering said second component pair is collimated (col. 5, line 44-45).

As to claims 4 and 5, the reference of Brierley teaches of the features of claims 4 and 5, as applied to claim 1, comprising UV-enhancing aluminum coating (col. 8, line 36-41). It would have been obvious to one having ordinary skill in the art at the time of invention to use planar mirror and parabolic mirror in said first component pair with each having an aluminum coating for the purpose of enhancing reflectivity, since these are well known aluminum coated mirror used advantages.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over of Brierley, as applied to claim 1. The reference of Brierley teaches of the features of claim 1, comprising first focal length of said first parabolic mirror (50) in said first component pair and second focal length of said parabolic mirror (22) in said second component pair. The reference of Brierley is silent regarding the sizes/dimension of the focal length of the parabolic mirrors. However it would have been obvious to one having ordinary skill in the art at the time of invention to provide a set of parabolic mirror with different focal length necessary to focus incident beam for the purpose of providing deflection and focusing of incident beam accurately.

As to claim 10, Brierley discloses everything claimed, as applied to claim 1 above, in addition Brierley discloses wherein said element is selected from the group consisting of a sample (12) and first detector (col. 2, line 15-21)(col. 2, 62-col. 3, line 1-5).

As to claim 13, Brierley discloses wherein said first detector is a spectroscopic ellipsometer (col. 1, line 5-10)(col. 2, line 5-13).

As to claim 15, the reference of Brierley discloses the claimed invention except for is silent with regard to the changes in the beam diameter, however it has been held that the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to provide a broadband beam that has a diameter of greater than 500  $\mu\text{m}$  at light source and a diameter lying in a range between 50 and 80  $\mu\text{m}$

when illuminated onto a top surface of a sample for the purpose of providing a more accurate measurement. (see *In re Aller*, 105 USPQ 233).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Brierley* in view of *Brierley*, as applied to claim 1. The reference of *Brierley* teaches of vertically adjustable precision guideways (col. 5, line 52-col. 7, line 21) that optically perform equivalent function of maintaining relative position of said parabolic mirror and said planar mirror such that distance from said parabolic mirror and a top surface of said sample is such that said broadband beam is focused by minimum component adjustment. The reference of *Brierley* is silent regarding a means of mechanically displacing said second component pair without altering a position of said second parabolic mirror relative to said Second planar mirror whereby a focus position of said broadband beam can be altered without moving said first component pair. However it would have been obvious to one having ordinary skill in the art at the time of invention to provide necessary means for mechanically displacing said second component pair without altering a position of said second parabolic mirror relative to said Second planar mirror whereby a focus position of said broadband beam can be altered without moving said first component pair for the purpose of maintaining the focus and the angle onto the sample.

As to claim 17, *Brierley* discloses a second set of components (20/38/52/53/55) defining a second light path, wherein said element is a first detector (col. 2, line 62-col. 3, line 1-5)(col. 7, line 44-47)(fig. 2).

Claims 7-8, 11 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Brierley* (5,106,196) in view of *Brill et al.* (2006/0001883).

Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Brierley* in view of *Brill*, as applied to claim 1. The reference of *Brierley* teaches of the features of claim 7, comprising first set of components (Fig. 2), however the reference of *Brierley* is silent regarding the first set of components further comprising a polarizing means to function as polarizing element. The reference of *Brill* teaches of polarizing means (620/621/822)(figs. 5 and 7)(page 1, par. 0002). It would have been obvious to one having ordinary skill in the art at the time of invention to provide first set of components that further comprises a polarizing means to function as polarizing element for the purpose of providing a more accurate measurement.

As to claims 8 and 27, Brierley and Brill disclose everything claimed, as applied to claims 7 and 26 above, however the reference of Brierley is silent regarding the broadband beam and polarizing means. The reference of Brill teaches of polarizing means (620) (figs. 5, 7 and 8)(page 1, par. 0002). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a polarizing means that polarizes said broadband beam in one of two orthogonal directions for the purpose of providing a more accurate measurement.

Claims 14, 18, 19, 20-22, 24, 28, 29, 31, 32, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brierley (5,106,196) in view of Brill et al. (2006/0001883), further in view of Norton (5,917,594).

As to claims 14 and 31, the reference of Brierley and Brill discloses everything claimed, as applied to claims 1 and 26 above, the reference of Brierley and Brill teaches of the features of claims 14 and 31, comprising light source. The reference of Brierley and Brill is silent regarding broadband and the wavelengths lying in a range between 190 and 1100 nm inclusive. The reference of Norton teaches of a broadband beam with wavelengths lying in a range between 190 and 1100 nm (col. 7, line 9-12). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to use broadband beam with wavelengths lying in a range between 190 and 1100 nm that is inclusive for the purpose of providing multiple measurement.

As to claims 18, 19, 22, 32, 33 and 34, the reference of Brierley (col. 1, line 14-16) and Brill discloses everything claimed, as applied to claims 1 and 26 above, The reference of Brill teaches of polarizing means (620/621/822)(figs. 5 and 7)(page 1, par. 0002). The reference of Brierley and Brill is silent regarding a third light path. The reference of Norton teaches of a third light path by using transmitted sample (figs. 1 and 2)(col. 6, line 39-51). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a third light path for the purpose of detecting radiation that is transmitted through the sample, further it would have been obvious to one having ordinary skill in the art at the time of invention to provide similar detecting elements including polarizing means in the said second detector for the purpose of detecting different wavelengths.

As to claim 20, Brierley, Brill and Norton discloses everything claimed, as applied to claim 18 above, in addition Brierley discloses wherein said element is a first detector (col. 2, line 15-21)(col. 2, line 67-col. 3, line1-5)

As to claim 21, Brierley, Brill and Norton discloses everything claimed, as applied to claim 18 above, however the reference of Brierley is silent regarding wherein said element is a second detector. The reference of Norton teaches of a wherein said element is a second detector (42')(figs. 1 and 2). It would have been obvious to one having ordinary skill in the art at the time of invention to provide said element that is a second detector for the purpose of detecting the third light path with accuracy.

As to claim 24, Brierley, Brill and Norton discloses everything claimed, as applied to claim 21 above, however the reference of Brierley is silent regarding wherein said second detector is a spectroscopic ellipsometer. The reference of Brill teaches of a second detector is a spectroscopic ellipsometer (page 3, par. 0041)(page 4, par. 0046). It would have been obvious to one having ordinary skill in the art at the time of invention to provide said second detector that is a spectroscopic ellipsometer for the purpose of detecting light path with accuracy.

As to claim 28 and 29, Brierley, Brill and Norton discloses everything claimed, as applied to claim 26 above, Brierley discloses illuminating top surface of sample (12) in said first light path and focusing beam reflected from top surface of said sample (12) through second light path (fig. 2), however the reference of Brierley and Brill is silent regarding the beam as being broadband. The reference of Norton teaches of a broadband beam (col. 7, line 9-12). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to provide broadband beam that illuminate said top surface of said sample in said first light path and focusing said broadband response beam from said sample in said second light path for the purpose of providing a more accurate measurement.

Claims 9, 12, 23, 25 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brierley (5,106,196) in view of Brill et al. (2006/0001883), as applied to claim 1, in view of the examiner Official Notice.

As to claims 9, 12, 23 and 30, the reference of Brierley and Brill disclose everything claimed, as applied to claims above, The reference of Brill teaches of polarizing means (620) and analyzer (621)(figs. 5, 7 and 8)(page 1, par. 0002), however the reference of Brierley and



Brill is silent with regard to broadband beam and to said polarizing means further comprising a rotatable polarization analyzer. The examiner wishes to take Official Notice of the fact that a polarizing means comprising a rotatable polarization analyzer for ellipsometer would have been well known. It would have been obvious to one having ordinary skill in the art at the time of invention to provide a polarizing means comprising a rotatable polarization analyzer for the purpose of rotating a beam (i.e. a P-polarized light beam is rotated to be an S-polarized light beam after propagating through a rotatable polarizing means (adjusting)), since these are well known rotating polarizer analyzer used advantages.

As to claim 25, the reference of Brierley and Brill is silent with regard to a fiber for redirecting said broadband beam. The examiner wishes to take Official Notice of the fact that the use of a fiber for redirecting/transmitting/emitting of broadband beam would have been well known as evident by Piwonka-Corle et al. (5,608,526). Further the reference of Norton discloses the use of fiber to redirecting broadband (col. 1, line 48-57). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to use a fiber for redirecting broadband beam for the purpose of directing reflected light beam to a particular detector which independently measure different wavelengths.

### ***Additional Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art method/apparatus for characterizing optical properties of a sample that may anticipate or obviate the claims of the applicant's invention.

### ***Conclusion***

### **Official Notice**

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument

to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well-known statement was made. See MPEP 2144.03, paragraphs 4 and 6.

### **Fax/Telephone Information**

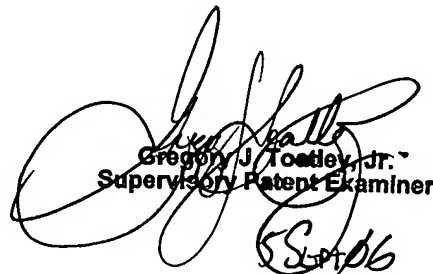
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi

September 1, 2006

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
5/21/06